

CLAIMS

1. A vehicle information processing system for using a Bayesian network model to provide a probabilistically appropriate recommendation to a recipient who receives the recommendation, the recipient being an occupant comprising:

a model storage unit containing a plurality of different Bayesian network models depending on the recommendation-condition, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation;

a model determining unit for determining a model corresponding to the recommendation-condition as an application model from the models stored in the model storage unit;

a reasoning unit for reading out the application model determined by the model determining unit from the model storage unit and for obtaining a recommendation through probabilistic reasoning that uses the read-out application model; and

a recommending unit for providing the recommendation obtained by the reasoning unit to the recipient.

2. The vehicle information processing system according to claim 1, wherein

the model storage unit contains a plurality of different Bayesian network models depending on the attribute of the recipient, and

the model determining unit determines a model corresponding to the attribute of the recipient as the application model.

3. The vehicle information processing system according to claim 1, wherein

the model storage unit contains a plurality of different Bayesian network models depending on the situation in which the recommendation is provided, and

the model determining unit determines a model corresponding to the situation in which the recommendation is provided as the application model.

4. The vehicle information processing system according to claim 1, further comprising:

a select-model storage unit containing a select-model applied to probabilistic reasoning for determining the application model from the models based on the attribute of the recipient and the situation in which the recommendation is provided, wherein

the model determining unit determines the application model through the probabilistic reasoning that uses the select-model read out from the select-model storage unit, based on the attribute of the recipient and the situation in which the recommendation is provided.

5. The vehicle information processing system according to claim 1, further comprising:

a response receiving unit for receiving a response made by the recipient when the recommending unit provides the recommendation obtained by the reasoning unit from the application model; and

a model learning unit for learning models stored in the model storage unit using the response received by the response receiving unit and for updating the models to models specialized for each recommendation-condition.

6. The vehicle information processing system according to claim 5, further comprising:

a learning model information storage unit containing the learning models in association with the application model applied to the probabilistic reasoning in the reasoning unit, wherein the learning models comprises, among the models stored in the model storage unit, a model identical with the application model and a different model influenced by the result of the reasoning that uses the application model, and

the model learning unit learns models using the response received by the response receiving unit, wherein the models are associated with the application model as the learning models in the learning model information storage unit.

7. The vehicle information processing system according to claim 6, wherein

the learning model information storage unit contains reflection parameters indicating the degree to which the response is reflected in learning of the learning models,

wherein each reflection parameter is set for each of a plurality of learning models corresponding to one application model, and

the model learning unit performs learning processing such that a reflection parameter associated with a learning model to be learned is read out from the learning model information storage unit and the response is reflected in the learning model to the degree according to the read-out reflection parameter.

8. The vehicle information processing system according to claim 5, further comprising:

a learning data obtaining unit for obtaining learning data used in learning by which the models specialized for each recommendation-condition through the learning by the model learning unit is brought closer to a general model, wherein

the model learning unit uses the learning data obtained by the learning data obtaining unit to learn the models stored in the model storage unit.

9. The vehicle information processing system according to claim 8, further comprising:

a learning reflection parameter storage unit containing learning reflection parameters indicating the degree to which the learning data is reflected in learning of the models, wherein

the model learning unit performs learning processing such that the learning data is reflected in learning of the models to the degree according to the learning reflection parameter read out from the learning reflection parameter storage unit.

10. The vehicle information processing system according to claim 1, comprising:

information recommending devices, each having the recommending unit;

and a center device communicatively connected with the information recommending devices,

wherein the center device collects from each information recommending device the response received from the recipient when the recommendation is provided.

11. A vehicle information processing system for using a reasoning algorithm to reason out a recommendation appropriate for a recipient who receives the recommendation, the recipient being an occupant, and for providing the recommendation obtained through the reasoning, further comprising:

a resource storage unit containing a plurality of different resources for calculation depending on the recommendation-condition, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation;

a resource determining unit for determining a resource for calculation corresponding to the

recommendation-condition from the resources for calculation stored in the resource storage unit;

a reasoning unit for reading out the resource for calculation determined by the resource determining unit from the resource storage unit and for obtaining a recommendation through reasoning that uses the read-out resource for calculation; and

a recommending unit for providing the recommendation obtained by the reasoning unit to the recipient.

12. A vehicle information recommending device for using a Bayesian network model to provide a probabilistically appropriate recommendation to a recipient who receives the recommendation, the recipient being an occupant, comprising:

a model storage unit containing a plurality of different Bayesian network models depending on the recommendation-condition, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation;

a model determining unit for determining a model corresponding to the recommendation-condition as an application model from the models stored in the model storage unit;

a reasoning unit for reading out the application model determined by the model determining unit from the model storage unit and for obtaining a recommendation through probabilistic reasoning that uses the read-out application model; and

a recommending unit for providing the recommendation obtained by the reasoning unit to the recipient.

13. The vehicle information recommending device according to claim 12, wherein the device is provided in a car.

14. A vehicle information processing method for using a Bayesian network model to provide a probabilistically appropriate recommendation to a recipient who receives the recommendation, the recipient being an occupant, comprising:

a model determining step of determining a model corresponding to the recommendation-condition as an application model from a plurality of different Bayesian network models depending on the recommendation-condition, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation;

a reasoning step of obtaining a recommendation through probabilistic reasoning that uses the application model determined in the model determining step; and

a recommending step of providing the recommendation obtained in the reasoning step to the recipient.

15. A program for using a Bayesian network model to provide a probabilistically appropriate recommendation to a recipient who receives the recommendation, the recipient being an occupant, causing a computer to perform:

a model determining step of determining a model corresponding to the recommendation-condition as an

application model from a plurality of different Bayesian network models depending on the recommendation-condition, wherein the recommendation-condition is a condition on the recipient side who receives a recommendation;

a reasoning step of obtaining a recommendation through probabilistic reasoning that uses the application model determined in the model determining step; and

a recommending step of providing the recommendation obtained in the reasoning step to the recipient.